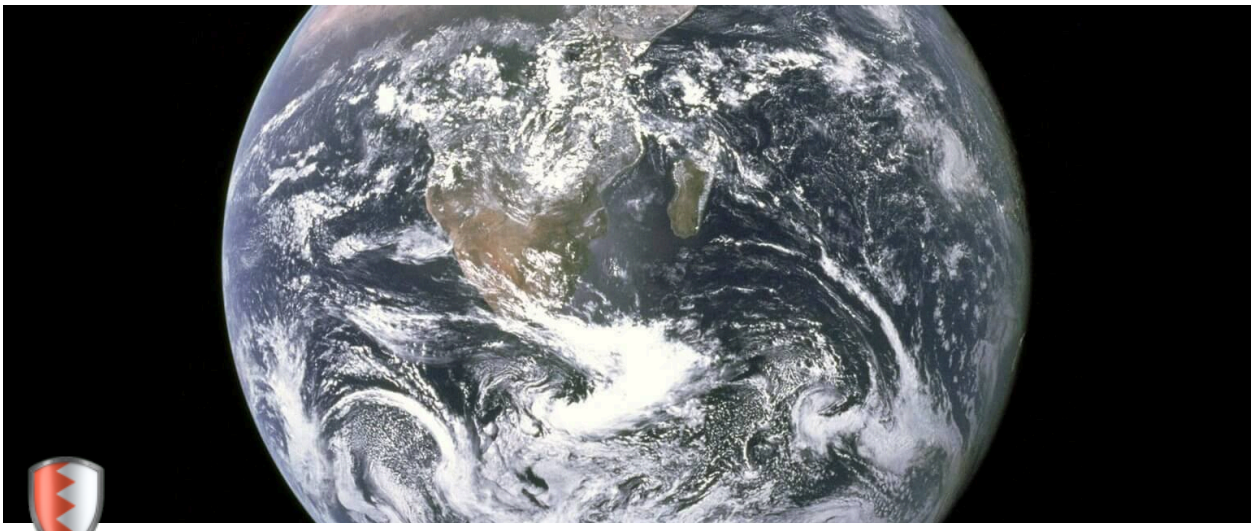

Homeland Security Track

Background

Rural, semi-rural, and high-crime underserved communities face significant public safety challenges due to limited law enforcement coverage and long emergency response times. Existing surveillance infrastructure is often outdated, sparse, or low-quality, providing little support for early detection, monitoring, or timely intervention.
Residents in these areas often rely on delayed reporting or ad hoc communication, which can leave emergencies unaddressed and reduce trust in public safety systems. Innovative, accessible, and scalable technology solutions could help bridge these gaps, enabling earlier detection, faster responses, and more informed decision-making for law enforcement and first responders.

Problem Statement

There is a gap in tools that can enhance public safety in underserved rural communities despite limited infrastructure and resources.

Your challenge is to design and build a solution that addresses this gap. Explore:

- How safety-relevant signals are captured and interpreted

- How the system supports actionable intervention or decision-making
- How it remains reliable, accessible, and usable in low-resource environments

Teams may focus on a specific aspect like emergency response, incident detection, communication, or develop a comprehensive system. The goal is to show that high-quality safety can be delivered to historically underserved populations.

Judging Criteria

We are looking for solutions that:

1. Empathy & Impact
    - Demonstrates understanding of the specific challenges faced by rural populations.
    - Designs that are practical, respectful of community privacy, and address genuine safety needs.
2. Feasibility & Scalability
    - Functions reliably under limited internet, inconsistent power, or low-cost maintenance conditions.
    - Can integrate with existing low-quality infrastructure such as basic CCTV or sensor networks.
3. Innovation
    - Goes beyond existing solutions, leveraging technology in novel ways or improving current approaches.
    - Demonstrates measurable advantages in effectiveness, efficiency, accessibility, or sustainability.

General Guidelines

- Consider different facets of rural safety: emergency response, incident detection, community communication, or proactive monitoring.

- Explore publicly available datasets on rural infrastructure, population distribution, emergency incidents, or low-quality surveillance footage. Open-source platforms, government portals, and research institutions may provide valuable data.
- Focus on technologies suited for low-resource environments, including offline capabilities, low-power devices, and lightweight models.
- Design for real-world constraints: noisy or incomplete data, limited connectivity, power instability, and low-cost deployment and maintenance.
- Document your design clearly: explain key decisions, trade-offs, limitations, and how the system could be extended or improved for broader rural contexts.